

REMARKS

The Office Action of December 15, 2004, has been carefully reviewed, and in view of the above amendments and the following remarks, reconsideration and allowance of the pending claims are respectfully requested.

In the above Office Action, claim 4 was rejected under 35 U.S.C. § 102(b) as being anticipated by *Muona* (U.S. Patent No. 5,699,261); claims 4 and 5 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Tuunanen* (U.S. Patent No. 5,934,387); claims 1 and 2 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Tuunanen* in view of *Dickel et al.* (U.S. Patent No. 5,560,437); and claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Tuunanen* in view of *Dickel et al.*.

One of the primary references upon which the Examiner relies in rejecting claim 4, *Muona*, discloses only that a basic set-value memory and a separate operator set-value can be used, and that the control unit can be connected to read either of these two memories. Reference number (7) to which the Examiner refers when discussing the sensor comprises a diagnosing unit (7) of *Muona*. The diagnosing unit is not a sensor but a device which compares a control value inputted by the operator and an adjustment value applied by a control unit. If the values differ from each other more than a predetermined maximum difference value, an indicating element (11), e.g., a flashing light, is applied to indicate that there is a failure in the equipment, as mentioned at column 3, lines 19-48, and in claim 4.

Muona does not disclose any sensors arranged to monitor the operation of the rock breaking machine nor does the control unit (1) or the operating unit (5) include any processing means for forming parameters describing the operating state

of the rock breaking machine. Rather, the operating unit (5) simply communicates with the operating means (6) in a conventional manner through hydraulic hoses or the like, as mentioned at column 2, lines 50-55. In practice, the operating unit (5) is a valve or a similar simple adjusting element, not a processing unit.

Accordingly, *Muona* does not disclose at least "one or more sensors arranged to monitor the operation of the rock breaking machine", or "a processing unit that is, during operation, arranged to form parameters describing the operating state of the rock breaking machine on the basis of the basic settings and measuring information", as set forth in claim 4. Applicant respectfully contends that the rejection of claim 4 as being anticipated by *Muona* must be withdrawn.

The Examiner has also relied upon the disclosure of *Tuunanen* in rejecting claims 4 and 5. However, *Tuunanen* discloses only that the position of a feed beam (3) relative to a base (1) of a rock drilling equipment is measured on the basis of measuring data obtained from sensors, which are arranged on the feed beam (3). That is, in *Tuunanen*, the rock drill (4) is not provided with any sensor to monitor the operation thereof, but rather, only the feed beam is provided with a sensor for measuring positioning data, as discussed at column 3, lines 26-28. As such, *Tuunanen* discloses a conventional rock drilling rig including a system for measuring the position of the feed beam (3) relative to the base (1). *Tuunanen* is totally silent about measuring the operation of the rock drill (4), and is therefore also silent about determining the operating state of the rock drill (4).

Accordingly, *Tuunanen* does not disclose at least "one or more sensors arranged to monitor the operation of the rock breaking machine", or "a processing unit that is, during operation, arranged to form parameters describing the operating

state of the rock breaking machine on the basis of the basic settings and measuring information”, as set forth in claim 4. Applicant respectfully contends that the rejection of claim 4 as being anticipated by *Tuunanen* must be withdrawn.

With regard to claim 5, since in *Tuunanen* the control unit (7) is placed on the base (1), it cannot be inside the body of the rock drill (4). Further, when information is transferred from one device to another device, the two devices are not integrated as part of one device. Thus, the sensors are not integrated as part of the control unit, and the limitations of claim 5 are not anticipated by *Tuunanen*.

The remaining claims, claims 1-3, stand rejected as being obvious over *Tuunanen* in view of *Dickel et al.* As discussed above, *Tuunanen* discloses only that the position of a feed beam (3) relative to a base (1) of a rock drilling equipment is measured on the basis of measuring data obtained from sensors, which are arranged on the feed beam (3). The rock drill (4) of *Tuunanen*, is not provided with any sensor to monitor the operation thereof, but rather, only the feed beam is provided with a sensor for measuring positioning data, as discussed at column 3, lines 26-28. As such, *Tuunanen* is totally silent with regard to a control of “the operation of the rock drilling apparatus on the basis of measuring information received from the sensor,” as recited in claim 1.

The secondary reference upon which the Examiner relies, *Dickel et al.*, discloses a telemetry method for measuring cable-drilled holes, as mentioned at column 1, lines 55 and 56. That is, the operation of a rock drill is not measured in *Dickel*, but instead the drill hole is being measured. In *Dickel* a logging probe is jetted into a drill string, as mentioned at column 2, lines 3 and 4. Since *Dickel* relates to the cable drilling, it cannot be implemented in drilling done by using drilling rigs as

disclosed in *Tuunanen*. Thus, because of the above-mentioned reasons, Applicant contends that it would not be obvious for a person skilled in the art to combine *Tuunanen* and the teachings of *Dickel*. Moreover, since the applied references relate to totally different drilling techniques, Applicant submits that the suggested combination would destroy the intended functionality of the disclosed devices therein.

Furthermore, at column 3, lines 11 and 12, *Dickel* discloses that the probe (1) is conveyed to its logging location in the region of a drill bit (5) by the drilling mud. Thus further confirming Applicant's position that the operation of the rock drill machine is not measured in *Dickel*, and that the invention of claim 1 would not be rendered obvious by the cited prior art.

And finally, as mentioned above, *Dickel* relates to telemetric methods for measuring cable-drilled holes. There is no indication in *Dickel* of a CAN bus communication link, and thus, Applicant submits that claim 3 is not rendered obvious by the combined teachings of *Tuunanen* and *Dickel*.

CONCLUSION

In view of the above amendments and remarks, Applicant respectfully submits that the claims of the present application are now in condition for allowance, and an early indication of the same is earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference would be helpful in resolving any remaining issues pertaining to this application; the Examiner is kindly invited to call the undersigned counsel for Applicant regarding the same.

Respectfully submitted,

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